

REMARKS

The Office Action dated August 24, 2005, has been received and reviewed.

Claims 1-12 and 14 are currently pending and under consideration in the above-referenced application, each standing rejected.

Reconsideration of the above-referenced application is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-12 and 14 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over that taught in Applicant's Prior Art (hereinafter "APA").

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In rejecting claims 1-12 and 14, it has been repeatedly asserted that the phrase "on average" means the same thing as the term "about." Office Action of August 24, 2005, pages 3, 4, 5, and 6. The meaning of the phrase "on average," as used in independent claims 1 and 8 differs significantly from the meaning of the phrase "about," the term upon which all of the legal precedent that has been cited in support of the claim rejections is based.

As used in independent claims 1 and 8, the phrase "on average" clearly indicates a number of in-film particles or surface roughness features per square millimeter of a layer of a semiconductor device structure, which number is determined by counting all of the in-film particles or surface roughness features of the entire layer, then dividing that number by the area of the layer, in square millimeters. Thus, the total number of in-film particles or surface

roughness features of the layer and the number of in-film particles or surface roughness features per square millimeter of the layer are very distinct numbers. As the opinions that have been cited by the Office indicate, the term “about,” in contrast, is not very distinct.

By reciting that a silicon nitride-comprising layer of a semiconductor device structure includes, on average, *less than* $1\frac{1}{4}$ in-film particles or surface roughness features per square millimeter, independent claim 1 does not recite subject matter that is taught or suggested in, or otherwise obvious in view of, the art that has been discussed in the “BACKGROUND” section of the above-referenced application.

Claims 2-7 are each allowable, among other reasons, for depending directly or indirectly from claim 1, which is allowable.

Claim 5 is additionally allowable because the purportedly admitted prior art does not teach or suggest that the surface of a layer that comprises anti-reflective material may be substantially free of at least one of measurable particulates or surface roughness. To the contrary, Fig. 4 of the above-referenced application shows a large number of in-film particles 44 on the surface of a dielectric anti-reflective coating (“DARC”) film 42. Further, paragraph [0009] of the above referenced application explains that the presence of about 40,000 or more non-uniformities or particles in a silicon nitride layer will probably be problematic due to the increased likelihood that they will cause structural deformities or other problems.

Independent claim 8 is allowable since the art that has been discussed in the “BACKGROUND” section of the above-referenced application does not teach or suggest a semiconductor device structure with a layer that comprises silicon nitride and that includes, on average, *less than* $1\frac{1}{4}$ in-film particles or surface roughness features of at least 120 nanometers size per square millimeter.

Each of claims 9-12 and 14 is allowable, among other reasons, for depending directly or indirectly from claim 8, which is allowable.

Claim 11 is further allowable since the purportedly admitted prior art does not include any teaching or suggestion that the surface of a layer that comprises anti-reflective material may be substantially free of at least one of measurable particulates or surface roughness. To the

contrary, Fig. 4 of the above-referenced application shows a large number of in-film particles 44 on the surface of a dielectric anti-reflective coating ("DARC") film 42. Further, paragraph [0009] of the above referenced application explains that the presence of about 40,000 or more non-uniformities or particles in a silicon nitride layer will probably be problematic due to the increased likelihood that they will cause structural deformities or other problems.

Withdrawal of the 35 U.S.C. § 103(a) rejections of claims 1-12 and 14 is respectfully requested.

CONCLUSION

It is respectfully submitted that each of claims 1-12 and 14 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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